

REMARKS

In the Office Action mailed November 11, 2005 (hereinafter, the "Office Action"), Claims 1 and 4-21 were pending for consideration with claims 2-3 and 22-30 being withdrawn from consideration. Of these, Claims 1, 4-15, and 20-21 were rejected as allegedly either anticipated or obvious under 35 U.S.C. §§ 102(e) and 103(a), respectively. Each of these rejections is addressed in turn below.

By the present amendment, Claim 1 has been amended to clarify that contact between diamond particles is "diamond-diamond contact." Further, Claim 1 has been amended to clarify that the packed diamond particles are bonded "by" the interstitial material rather than merely being present. It should be noted that such amendment is made without conceding the correctness of the present rejection, and that Applicant expressly reserves the right to pursue any canceled or relinquished subject matter in a future continuing application.

Additionally, no new matter is added by this amendment. Specifically, support for "diamond-diamond contact" can be found at page 9, line 10 and throughout the specification. Support for bonding "by" the interstitial material can be found at page 11, lines 30-31. Accordingly, Claims 1, 4-15 and 20-21 remain pending for consideration in the present application, and reconsideration thereof is respectfully requested.

Rejection Under 35 U.S.C. § 102(b)

Claims 1, 4, 11-14, and 20 were rejected as allegedly anticipated by United States Patent Publication No. 2002/0023733 to Hall (hereinafter "Hall").

Amended Claim 1 requires that the interstitial material is the mechanism by which the diamond particles are bonded together. Thus, although the Applicant submits that the term “with” sufficiently clarifies this point, the term “by” is considered by the Examiner to more clearly emphasize this distinction.

In contrast to the claimed invention where diamond particles are bonded by interstitial material, the Hall reference fails to disclose a mass of packed diamond particles bonded together by any of the listed and claimed interstitial materials. The Hall reference does disclose a number of “bondable materials” which include copper and aluminum. However, as discussed during the Examiner interview, these materials are not interstitial materials which are used to bond the diamond particles together. Rather, these “bondable materials” “accumulate, or pool, in a layer near or on the opposite surface of the heat spreader.” See paragraph 28 of Hall. Further, these “bondable materials” do not act to bond the diamond particles together. The diamond of the Hall reference is a conventional cobalt sintered diamond mass having cobalt remaining in the mass and having a “bondable material” added to form a layer on one side of the heat spreader to facilitate bonding with another component such as a heat sink or thermal source. As the Hall reference fails to teach or suggest the claimed interstitial materials which are also used to bond the diamond particles it also fails to anticipate the claimed invention. Therefore, Applicant respectfully submits that the Hall reference does not teach the claimed invention and requests that the rejections based thereon be withdrawn.

Rejection Under 35 U.S.C. § 103(a) based on Chen

Claims 1, 4-5, 7-10, 12-13, 15, 20, and 21 were rejected as allegedly obvious over U.S. Patent No. 5,096,465 (hereinafter, “Chen”) in view of Howard (U.S. 3,829,544), Tzeng (U.S. 6,284,315), and Nishibayashi (JP 09-312362). Applicant respectfully submits that the rejected claims are patentable over the cited references for the reasons set forth below, and requests that the rejections be withdrawn. Specifically, Applicant contends that the cited references fail to make a *prima facie* case of obviousness in that the cited references fail to teach or suggest all of the claim limitations of Applicant’s invention.

None of the cited references teaches “packing diamond particles” such that each particle is “substantially in diamond-diamond contact with at least one other particle.” Specifically, Chen teaches packing coated diamond particles to form a metallic matrix with diamond particles embedded and spaced apart therein. See col. 4, lines 33-37; col. 8, lines 38-40; and especially col. 8, lines 63-68. Throughout the Chen reference, various methods and specifications for coating diamond particles are discussed. In all cases, the disclosure teaches and emphasizes that coated diamond particles are used. As a result, the products of Chen fail to teach direct diamond to diamond contact as claimed. Furthermore, Chen actually teaches away from the claimed invention by requiring the coating. Specifically, the claimed invention requires no coatings since such material would decrease thermal conductivity of the final product. The secondary references fail to provide any suggestion or motivation to remedy this deficiency.

In light of the above comments, Applicant respectfully submits that each and every element of the claimed invention is neither taught nor suggested by the cited references individually or in

combination. As such, a *prima facie* case necessary to support a § 103 rejection was not established.

Rejection Under 35 U.S.C. § 103(a) based on Pender

Claims 1, 11-14, and 20 were rejected as allegedly obvious over U.S. Patent No. 6,541,115 (hereinafter, “Pender”) in view of Howard (U.S. 3,829,544), Tzeng (U.S. 6,284,315), and Nishibayashi (JP 09-312362). Applicant respectfully submits that the rejected claims are patentable over the cited references for the reasons set forth below, and requests that the rejections be withdrawn. Specifically, Applicant contends that the cited references fail to make a *prima facie* case of obviousness in that the cited references fail to teach or suggest all of the claim limitations of Applicant’s invention in a similar manner that the Chen reference fails.

None of the cited references teaches “packing diamond particles” such that each particle is “substantially in diamond-diamond contact with at least one other particle.” Specifically, Pender teaches packing coated diamond particles to form a metallic matrix with diamond particles embedded and spaced apart therein. See Title; Fig. 2-4; col. 2, lines 33-47; and col. 6, lines 35-47. Throughout the Pender reference, coated diamond particles are discussed and used to form the polycrystalline composite tools. In all cases, the disclosure teaches and emphasizes that coated diamond particles are used in the steps of forming the tool. As a result, the methods of Pender fail to teach direct diamond to diamond contact as claimed. Furthermore, Pender also teaches away from the claimed invention by requiring the coating. The secondary references fail to provide any suggestion or motivation to remedy this deficiency.

In light of the above comments, Applicant respectfully submits that each and every element of the claimed invention is neither taught nor suggested by the cited references individually or in

combination. As such, a *prima facie* case necessary to support a § 103 rejection was not established.

Accordingly, Applicant respectfully requests that the rejections be withdrawn and the claims be passed to issue.

CONCLUSION

In view of the foregoing, Applicant believes that presently pending Claims 1, 4-15 and 20-21 present allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be resolved during a telephone interview, the Examiner is invited to telephone Mr. Erik Ericksen, or in his absence, the undersigned attorney, at (801) 566-6633, to address such issues as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 20-0100.

Dated this 21st day of February, 2006.

Respectfully submitted,

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